

PILLARs Technical Learning Note

Digital ID Systems and Public Health in the Age of AI

Introduction

Across the Global South, governments are investing in the digital foundations needed to connect people, data and public services. These investments span digital identification and secure data exchange, CRVS digitalization, interoperable health information systems and registries, disease surveillance platforms, and increasingly digitized primary health care.^{1,2} Civil registration and vital statistics are an important part of this foundation. Birth registration establishes legal identity, while the continuous registration of births, deaths, and causes of death provides governments with the information needed to understand their populations and plan services.³

On Aug. 12, 2026, PILLARs convened a virtual Peer Learning Exchange on [Digital ID Systems and Public Health in the Age of AI](#) to explore a practical question:

How are countries designing and implementing trusted and inclusive digital ID systems that also advance public health goals?

The exchange brought together **more than 350 participants from 83 countries**, with approximately **80% joining from Africa, Asia, and Latin America**. It drew on **implementation experiences from Rwanda, Ethiopia, Brazil and Bangladesh**, alongside regional perspectives from the **WHO Regional Office for Africa and the Pan American Health Organization (PAHO)**. This Technical Learning Note synthesizes the practical challenges, adaptations and lessons shared across those experiences and considers what they mean for AI-enabled public health.

Several common lessons emerge across the countries' experiences:

- **Countries follow different pathways:** Countries are starting from different institutional and technical foundations; progress depends on building from systems and mandates that already **work**.
- **Institutions come first:** Clear roles, trusted source systems, and accountability are as important as the technology connecting them.
- **Health systems contribute and benefit:** Health services can strengthen civil registration through routine birth and death notification, while better identity and population data can support continuity of care, planning, and follow-up.
- **Inclusion must be designed:** Unique identification alone does not guarantee access; systems need practical ways to include people outside standard administrative, facility-based, or digital routes.

These lessons become even more consequential as countries begin to integrate AI into public health. Introducing AI does not create a new foundation; it raises the standard those foundations must meet.⁴

AI-enabled applications may operate at different levels: Some depend on reliably linking information to the same person across services and over time, while others depend on complete and representative population data for surveillance, planning and public health intelligence.

Three practical considerations follow:



Data Fitness

Are the underlying records accurate, sufficiently complete and representative for the intended AI use?



Use-case Fit

Is the AI linked to a clearly defined public health decision or action, with the right data connections to support it?



AI Governance

Do existing safeguards extend beyond data access to how AI-generated inferences and outputs are validated, used, monitored and challenged?

This creates a forward-looking question for countries investing in civil registration, digital identity and connected health systems:

Can these systems do more than identify individuals? Can they also help generate the reliable, connected population data needed for AI-enabled public health applications?

Country Spotlights



Rwanda

Building from civil registration to a connected identity ecosystem

[Rwanda](#) is deepening an already operational connection between civil registration, the national population registry and service-delivery systems. Its CRVS system updates the population registry in real time for citizens, refugees and foreign residents, and the digital population registry is linked to more than 70 public and private institutions. Health services are already part of this ecosystem, including links with immunization records, cause-of-death workflows and social protection systems.⁵

Implementation challenges and lessons

- **Point-to-point limits:** As more institutions connect, separate bilateral integrations risk creating another layer of fragmentation. Rwanda is moving toward a shared national data-exchange platform.
- **Trust is foundational:** Rwanda's experience highlights the importance of stakeholder confidence in the ID system as a trusted source of identification; without it, uptake and data sharing can falter.



Addis Ababa, Ethiopia

Bringing civil registration closer to families through health facilities

Addis Ababa is strengthening the link between civil registration and the health facilities where many births and deaths occur. The aim is to make registration timelier and more accessible by moving information more directly between health services and civil registration authorities. Birth and death notification through hospitals and health centers can reduce the burden on families, limit repeated visits to separate offices, and improve the mortality information available for public health planning.

Implementation challenges and lessons

- **Connecting health facilities and civil registration:** Ethiopia's national framework gives health facilities a formal role in birth and death registration. In Addis Ababa, this is being taken further through efforts to digitally connect health facilities and civil registration, reducing separate steps for families and improving the flow of vital-event information.
- **Death notification:** Addis Ababa is strengthening the link between death registration and health systems to improve the timeliness and completeness of mortality information.
- **Coordination:** Progress depends on coordination among health workers, health facilities, civil registration authorities and other government institutions, alongside appropriate legal and governance arrangements.



Brazil

Integrating identity while preserving universal access to health care

[Brazil](#) is aligning the CPF, its individual taxpayer identification number, with an established health identification system. The central challenge is to strengthen identity integration without making the preferred identifier a condition for receiving care. Because some people seeking services do not have a CPF or even a birth certificate, the National Health Card remains an alternative pathway. People can still be registered using available demographic information and continue to access care.⁶

Implementation challenges and lessons

- **Identification without exclusion:** The preferred national identifier cannot become a barrier to health services; alternative identifying information can be used when needed.
- **Progressive integration:** Brazil is moving from a health-sector-specific identifier toward stronger connection with national identity infrastructure.



Bangladesh

Building a next-generation identity ecosystem

[Bangladesh](#) is designing a federated identity ecosystem to connect civil registration, national identification, health, education, and other systems that were developed separately. The aim is not to create another card or central database, but to establish a trusted lifelong identity while allowing each sector to retain responsibility for its own data. Birth registration would provide an early entry point, supported by health facilities and community workers, while a national data-exchange mechanism would route authorized requests between systems.⁷

Implementation challenges and lessons

- **Child identity gap:** Children could remain disconnected from parts of the identity ecosystem until receiving an adult ID. Bangladesh is developing a lifelong identity pathway beginning with birth registration.
- **Centralization risk:** Bangladesh moved toward a federated model, so sectors retain their own records rather than placing all data in one repository.
- **Legacy duplication:** Existing systems contain inconsistent and potentially duplicate records, requiring deduplication and reconciliation before migration.

Cross-country learning

Across the four country experiences, several shared lessons emerged:



Starting points: There is no single sequence for building a connected identity ecosystem. Countries are starting from institutions and systems that already have a credible mandate and practical foundation:

- **Rwanda** is deepening links between CRVS, the population registry, and public services.
- **Addis Ababa** is strengthening birth and death notification through health facilities.
- **Brazil** is aligning a national identifier with an established health identification system.
- **Bangladesh** is designing a federated model to connect systems that developed separately.



Health systems role: Health services provide important points of contact across the life course. Births and deaths can be reported through facilities, while community health workers can help identify events outside them. In return, more reliable identity can support immunization follow-up, mortality information, continuity of care, eligibility verification and links to social protection. Brazil also shows that stronger identification must support access to care rather than become a condition for receiving it.



Clear institutional roles: Fragmentation is not only a technology problem; it also reflects separate mandates, workflows, and responsibilities. Connecting systems requires clarity on who establishes legal identity, manages identity information, retains sector-specific data, and corrects records. Rwanda's experience also showed that institutions need to trust the identity system and its source data before they will use or share it. Technical interoperability therefore depends on institutional agreement, legal authority and accountability.



People-centered access: Every country encountered people who did not fit in the standard administrative pathway, including people without national identification or birth certificates, babies born at home, refugees and foreign residents, and people facing digital or access barriers. The shared lesson is that a unique identifier does not automatically create inclusion. Alternative registration and identification pathways need to be built into the system from the outset.

Practical considerations for AI-enabled public health

As civil registration, identity and health information systems begin to support AI-enabled public health applications, three practical questions become important:

Are the data fit for the intended use? Does the use case require the right data to be connected? Are appropriate governance, safeguards and accountability in place?



Data fitness

Can the underlying data be relied on?

Records need to be linked to the right person, remain accurate and current, and collectively provide a sufficiently complete picture of the population. Unique identifiers can support deduplication, cross-facility linkage, and more reliable program data, as illustrated in [WHO guidance on case-based TB surveillance](#).⁸ For AI to work effectively, gaps in these foundations matter. If births or deaths are missed, causes of death are poorly recorded, or some populations are systematically underrepresented, AI can reproduce those gaps in estimates of risk, need or population health. Data fitness therefore requires **identity integrity, sufficient population coverage, accurate linkage, and information that remains current and traceable to its source.**



Use-case Fit

What public health decision is the AI intended to support, and what data is needed for it to do that reliably?

The use case should determine **which identity, CRVS, and health information sources need to be connected**, rather than assuming that all available data should be linked. Person-level applications such as risk identification, referral or follow-up may require longitudinal records that connect back to an individual. Surveillance and population-intelligence applications may instead depend on complete and comparable data produced from those underlying records. [WHO's multisource collaborative surveillance guidance](#) similarly recommends starting with the public health decision and then identifying the information needed to support it.



AI Governance

Are the data and AI outputs adequately protected and governed?

For person-level data, linking identity, CRVS and health records increases both their usefulness and the consequences of inappropriate access, disclosure or misuse. Safeguards therefore need to cover data security, access controls, purpose limitation and how much information is necessary to link for the intended

use. The World Bank's ID4D guidance emphasizes purpose limitation, data minimization and protection against unnecessary connections between databases. AI adds another layer of responsibility. Governance should define who can authorize an AI use, how its performance is validated, who can act on or override its outputs, how errors are monitored, and when its use should stop. [WHO guidance](#) similarly emphasizes intended use, validation, human accountability and ongoing monitoring.^{10,11}

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Endnotes

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